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REFERENCE MANUAL

CARD CONTENT					SOURCE CONTENT	
Col- umns	Item	Code	Code, Definition	Remarks	Units or Symbols	Reporting and Coding Practices
1	Octant	0,1,2, 3,5,6, 7,8	Division of globe		Same as code	
2-3	Latitude	00-90	Angular distance north or south of equator	Punched to whole degrees.	00-90	
4-5	Longitude	00-90	Distance east or west measured by the arc between two meridians, one of which passes through any given point and the other through a point chosen as standard of reference, usu- ally Greenwich, England	Punched to whole degrees.	00-90	
6-7	Year	45--	1945--Continuous		1945--	
8-9	Month	01-12	January-December		1-12	
10-11	Day	01-31	Day of month		1-31	
12-13	Hour	00-23	Hour of day	Local Standard time.	0000-0023	Normally, hourly observations were reported. However, less than 24 observations per day are recorded occasionally by most ships.
14-15	Course	00-36	Course of ship	Reported true compass course in whole de- grees but punched to nearest tens of degrees.	0-360	
16	Speed	0	Ship stopped		Same as code	
		1	1 to 3 knots			
		2	4 to 6 knots			
		3	7 to 9 knots			
		4	10 to 12 knots			
		5	13 to 15 knots			
		6	16 to 18 knots			
		7	19 to 21 knots			
		8	22 to 24 knots			
		9	Over 24 knots			
		Blank	Unknown		Missing	

CARD CONTENT					SOURCE CONTENT					
Col- umns	item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices				
17-18	Ceiling Height	00-95	0 to 95 Hundreds of feet		0-95	Reported and punched to nearest 100 feet.				
		XX	Indicates Unlimited ceiling		Un or Blank					
19-22	Sky Condition	See Sky Condition Code in Reporting and Coding Practices column				* - SKY CONDITION CODE				
						Columns				
						19	20	21	22	
						Clear	0	X	X	0
						Hi Thin Sctd	-0/ 1	X	X	-
						Hi Sctd	0/ 2	X	X	-
						Hi Thick Sctd	+0/ 3	X	X	-
						Hi Thin Brkn	-0/ 4	X	X	-
						Hi Brkn	0/ 5	X	X	-
						Hi Thick Brkn	+0/ 6	X	X	-
						Hi Thin Ovc	-0/ 7	X	X	-
						Hi Ovc	0/ 8	X	X	-
						Hi Thick Ovc	+0/ 9	X	X	-
						Low Thin Sctd	-0	0	Height*	Height* 1
						Low Sctd	0	0	Height*	Height* 2
						Low Thick Sctd	+0	0	Height*	Height* 3
						Low Thin Brkn	-0	4	X	X
						Low Brkn	0	5	X	X
						Low Thick Brkn	+0	6	X	X
						Low Thin Ovc	-0	7	X	X
						Low Ovc	0	8	X	X
						Low Thick Ovc	+0	9	X	X
						Hi Ovc Lwr Brkn	0/0	X 8	X	X 5
						Hi Ovc Lwr Sctd	0/0	X 8	Height*	Height* 2

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CARD CONTENT					SOURCE CONTENT						
Col- umns	item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices					
19-22	Sky Condition	See Sky	Condition Code in Reporting and Coding Practices column			SKY CONDITION CODE					
						Columns					
							19	20	21	22	
						Hi Brkn Lwr Brkn	⊙/⊙	X 5	X	X	5
						Hi Brkn Lwr Sctd	⊙/⊙	X 5	Height*	Height*	2
						Hi Sctd Lwr Sctd	⊙/⊙	X 2	Height*	Height*	2
						Ovc Lwr Brkn	⊙⊙	8	X	X	5
						Ovc Lwr Sctd	⊙⊙	8	Height*	Height*	2
						Brkn Lwr Brkn	⊙⊙	5	X	X	5
						Brkn Lwr Sctd	⊙12⊙	5	Height*	Height*	2
Sctd Lwr Sctd	⊙12⊙	2	Height*	Height*	2						
Obscured	X	0	X	X	X						
				*Height of Lower Scattered Clouds.							
23-25	Visibility	000-990	0 to 99 miles	Tens and units are punched in columns 23 and 24, respectively. Fractions of a mile are punched in column 25.	0-99 Miles	EXAMPLE:					
						Miles	23	24	25		
						1/16	0	*0	1		
						3/4	0	0	9		
						6	0	6	0		
						15	1	5	0		
26-35	Weather and/or Ob- struction to Vision	0	No thunder or tornado		Blank						
26	Thunder and Tornado	1	Thunder		Blank						
27		0	No liquid precipi- tation		Blank						
		1	Light rain		Blank						
		2	Moderate rain		Blank						
		3	Heavy rain		Blank						
		4	Light rain showers		Blank						
		5	Moderate rain showers		Blank						

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CARD CONTENT					SOURCE CONTENT	
Col- umns	item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
27	Thunder and Tornado	6	Heavy rain showers		RW+	
		7	Light freezing rain		ZR-	
		8	Moderate freezing rain		ZR	
		9	Heavy freezing rain		ZR+	
		Blank	Unknown		Missing	
28		0	No liquid precipi- tation		Blank	
		1	Light rain squall		RQ-	
		2	Moderate rain squall		RQ	
		3	Heavy rain squall		RQ+	
		4	Light drizzle		L-	
		5	Moderate drizzle		L	
		6	Heavy drizzle		L+	
		7	Light freezing drizzle		ZL-	
		8	Moderate freezing drizzle		ZL	
		9	Heavy freezing drizzle		ZL+	
29	Frozen Precipita- tion	0	No frozen precipi- tation		Blank	
		1	Light snow		S-	
		2	Moderate snow		S	
		3	Heavy snow		S+	
		4	Light snow pellets		SP-	
		5	Moderate snow pellets		SP	
		6	Heavy snow pellets		SP+	
30		Blank	Unknown		Missing	
		0	No frozen precipi- tation		Blank	
		1	Light snow showers		SW-	
		2	Moderate snow showers		SW	
		3	Heavy snow showers		SW+	
		4	Light snow squall		SQ-	
		5	Moderate snow squall		SQ	
31		6	Heavy snow squall		SQ+	
		Blank	Unknown		Missing	
		0	No frozen precipi- tation		Blank	
		1	Light sleet		E-	
		2	Moderate sleet		E	
		3	Heavy sleet		E+	

CARD CONTENT					SOURCE CONTENT	
Col- umns	Item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
31	Frozen Precipitation	4	Light hail		A-	
		5	Moderate hail		A	
		6	Heavy hail		A+	
		7	Light small hail		AP-	
		8	Moderate small hail		AP	
		9	Heavy small hail		AP+	
		Blank	Unknown		Missing	
32	Obstructions to Vision	0	No obstruction		Blank	
		1	Light fog		F-	
		2	Moderate fog		F	
		3	Dense fog		F+	
		4	Light ice fog		IF-	
		5	Moderate ice fog		IF	
		6	Dense ice fog		IF+	
		7	Light ground fog		GF-	
		8	Moderate ground fog		GF	
		9	Dense ground fog		GF+	
		Blank	Unknown		Missing	
33		0	No obstruction		Blank	
		1	Light smoke		K-	
		2	Moderate smoke		K	
		3	Dense smoke		K+	
		5	Haze		H	
		7	Light smoke and haze		KH-	
		8	Moderate smoke and haze		KH	
		9	Dense smoke and haze		KH+	
		Blank	Unknown		Missing	
34		0	No obstruction		Blank	
		1	Light dust		D-	
		2	Moderate dust		D	
		3	Heavy dust		D+	
		4	Light blowing snow		BS-	
		5	Moderate blowing snow		BS	
		6	Heavy blowing snow		BS+	
		7	Light drifting snow		GS-	
		8	Moderate drifting snow		GS	
		9	Heavy drifting snow		GS+	
		Blank	Unknown		Missing	
35		0	No obstruction		Blank	
		1	Light blowing dust		BD-	
		2	Moderate blowing dust		BD	
		3	Heavy blowing dust		BD+	

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CARD CONTENT					SOURCE CONTENT	
Col- umns	item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
35	Obstruc- tions to Vision	4	Light blowing sand		BN-	
		5	Moderate blowing sand		BN	
		6	Heavy blowing sand		BN+	
		7	Spray		Spray	
		Blank	Unknown		Missing	
36-38	Pressure	000-999	900 to 1099 milli- bars	Sea level pressure punched to tenths of a mil- libar	Millibars to Tenths	EXAMPLE: <div>Columns 36 37 38 X 984.6 8 4 6 1020.3 2 0 3</div>
		X	Less than 1000 milli- bars			
39-40	Dry Bulb Tempera- ture	00-99	0°F to 99°F	X overpunched in column 39 indicates minus (-) temperature. X overpunched in column 40 indicates tempera- ture equal to or greater than 100 degrees.	0°F to 99°F	
		X	Minus (-), or 100° temperature or over			
41-42	Dew Point	00-99	0°F to 99°F	X overpunched in column 41 indicates minus (-) dew point reading.	0°F to 99°F	
		X	Minus (-) dew point reading			
43-44	Wind Direction	00	Calm		00	Also recorded as: <u>Calm</u> <u>NNE</u> <u>NE</u> <u>ENE</u> <u>E</u> <u>ESE</u> <u>SE</u> <u>SSE</u> <u>S</u> <u>SSW</u> <u>SW</u> <u>WSW</u> <u>W</u> <u>WNW</u> <u>NW</u> <u>NNW</u> <u>N</u>
		12	North Northeast		↙	
		22	Northeast		↖	
		32	East Northeast		↗	
		33	East		→	
		34	East Southeast		↘	
		44	Southeast		↙	
		54	South Southeast		↘	
		55	South		↓	
		56	South Southwest		↙	
		66	Southwest		↖	
		76	West Southwest		↙	
		77	West		→	
		78	West Northwest		↘	
		88	Northwest		↖	
		18	North Northwest		↙	
		11	North		↑	
		Blank	Unknown		Missing	
45-46	Wind Velocity	00-99	0 to 99 Knots	X overpunched in column 45 indicates 100 knots or more.	Whole Knots	
		X	100 knots or more			

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CARD CONTENT					SOURCE CONTENT	
Col- umns	item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
47	Pressure Tendency	0	Rising, then falling	Barometer now higher than or the same as 3 hours ago.	0	Usually recorded every 3 hours
		1	Rising, then steady; or rising, then ris- ing more slowly		1	
		2	Unsteady		2	
		3	Steady or rising		3	
		4	Falling or steady, then rising; or ris- ing, then rising more quickly		4	
		5	Falling, then rising	Barometer now lower than 3 hours ago.	5	
		6	Falling, then steady, or falling then fall- ing more slowly		6	
		7	Unsteady		7	
		8	Falling		8	
		9	Steady or rising, then falling; or falling, then fall- ing more quickly		9	
		Blank	Unknown		Missing	
48-49	Amount of Pressure Change	00-99	0 to 9.9 Millibars	X overpunched in column 48 indicates 10 or more millibars.	Whole Millibars	Usually recorded every 3 hours
		X	10 or more Millibars		Tenths of Millibars	
50	Amount of Low Cloud	0-9	0 to 9 tenths	9+ was punched as "10"-tenths. Few clouds were punched as "0". 1- cloud amount was punched as "0".	0 - 10	
		X	An X punched in col- umn 50 indicates 10- tenths		1-, F, 9+	
51	Low Cloud Type	0	No low clouds		0	When more than one type of cloud was reported the predominant type was the only type punched.
		1	Stratus		ST	
		2	Stratocumulus		SC	
		3	Cumulus		CU	
		4	Cumulonimbus		CB	
		5	Nimbus		NS	
		6	Fog		F	
		Blank	Unknown		Missing	
52-53	Height of Low Clouds	00-95	0 to 9500 feet		Feet	
		XX	XX punched in columns 52 and 53 indicates "No low clouds"			
		Blank	Unknown		Missing	

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CARD CONTENT					SOURCE CONTENT	
Col- umns	item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
54	Amount of Middle Cloud	0-9	0 to 9-tenths	9+ was punched as "10"-tenths. Few clouds were punched as "0". 1- cloud amount was punched as "0".	0 - 10	
		X	An X punched in col- umn 54 indicates 10-tenths		1-,F,9+	
55	Middle Cloud Type	0	No middle clouds		0	
		1	Altostratus		AS	
		2	Alto cumulus		AC	
		3	High Cumulus		HI CU	
		4	High Cumulonimbus		HI CB	
		5	Nimbostratus		NS	
		Blank	Unknown		Missing	
56-58	Height of Middle Cloud	050-250	5000 to 25,000 feet	Recorded and punched to hundreds of feet.	Feet	
		XXX	XXX punched in col- umns 56-58 indicates "No middle clouds"			
		Blank	Unknown		Missing	
59	Amount of High Cloud	0-9	0 to 9-tenths	9+ was punched as "10"-tenths. Few clouds were punched as "0". 1- cloud amount was punched as "0".	0 - 10	
		X	An X punched in col- umn 59 indicates 10-tenths		1-,F,9+	
		Blank	Unknown		Missing	
60	High Cloud Type	0	No high clouds		0	
		1	Cirrostratus		CS	
		2	Cirrus		CI	
		3	Cirrocumulus		Cc	
		Blank	Unknown		Missing	
61-62	Height of High Cloud	15-40	15,000 to 40,000 feet	Punched to thousands of feet	Feet	
		XX	XX punched in col- umns 61-62 indicates "No high clouds"			
		Blank	Unknown		Missing	
63	Total Cloud Amount	0-9	0 to 9-tenths	9+ was punched as "10"-tenths. Few clouds were punched as "0". 1- cloud amount was punched as "0".	0 - 10	Total cloud amount punched as recorded. If not reported, column 63 was left blank.
		X	An X punched in col- umn 63 indicates 10-tenths total cloud amount		1-,F,9+	
		Blank	Unknown		Missing	

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CARD CONTENT					SOURCE CONTENT	
Col- umns	Item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
64-65	Wet Bulb	0-99 X	0° F to 99° F Minus (-) wet bulb reading	X overpunched in column 64 indicates minus (-) wet bulb reading.	Tenths	Rounded to whole degrees before punching.
		Blank	Unknown		Missing	
66-67	Water Tempera- ture	00-99	0° F to 99° F		Whole Degrees	
		Blank	Unknown		Missing	
68-70	Relative Humidity	000-100	0 to 100 percent		Whole Percent	
		Blank	Unknown		Missing	
71	State of Sea			Height of wave, crest to trough:	0 - 9	
		0	Flat, oily	0		
		1	Calm, rippled	0		
		2	Smooth (wavelets)	Less than 1 foot		
		3	Slight	1 to 3 feet		
		4	Moderate	3 to 5 feet		
		5	Rough	5 to 8 feet		
		6	Very rough	8 to 12 feet		
		7	High	12 to 20 feet		
		8	Very high	20 to 40 feet		
		9	Mountains	Over 40 feet		
		Blank	Unknown		Missing	
72	Direction of Sea	0	Calm		C	
		2	Northeast		NE	
		3	East		ENE, E, ESE	
		4	Southeast		SE	
		5	South		SSE, S, SSW	
		6	Southwest		SW	
		7	West		WSW, W, WNW	
		8	Northwest		NW	
		1	North		NNW, N, NNE	
		X	Unknown		Unknown	
		Blank	Missing		Missing	
73-74	Height of Swell	00-99	0 to 99 feet		Feet	
75	Direction of Swell	0	Calm		C	
		2	Northeast		NE	
		3	East		ENE, E, ESE	
		4	Southeast		SE	
		5	South		SSE, S, SSW	

CARD CONTENT					SOURCE CONTENT	
Col- umns	Item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
75	Direction of Swell	6	Southwest		SW	
		7	West		WSW, W, WNW	
		8	Northwest		NW	
		1	North		NNW, N, NNE	
		X	Unknown		Unknown	
		Blank	Missing		Missing	
76-77	Period of Swell	00-39	0 to 39 seconds		Seconds	
78-80	Ship Number	0-999	Arbitrary number assigned to Navy ships		0-999	Whenever possible the ship's number was assigned in numerical sequence, according to the alphabetical arrangement of the ship's names.